411.

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THE CHIRONIAN.

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WITH this number and volume, the new Board of Editors assumes the management of THE CHIRONIAN for the present college year, and we earnestly trust its pages will merit the careful perusal that we have the confidence you will give them. We do not promise to revolutionize the policy of THE CHIRONIAN; neither do we promise to write very profound or lengthy articles, but we do propose to make the pages of THE CHIRONIAN of interest to both Alumni and students, by helping to recall college days, and in the full accounts of all important college events. Not simply will the articles be of interest, but also of value, in reports of leading lectures, valuable clinical records and notable surgical cases—in all of which we will aim to be concise, lucid and brief. Though this is a student's journal edited and controlled by students, we look to our Alumni, particularly, for encouragement and support; for it is certain that an able, spirited and interesting paper indicates a strong and prosperous college—such a standard depending not only upon the ability of the board, and the support of the students—but upon the interest of tbe Alumni. Consequently, we ask you for communications, interesting cases, news of marriages or deaths, etc. While we have confidence in the Alumni that they will aid us by their active assistance and by their much needed financial support—we need the same co-operation of the students. For every thing that is done in the name of our college affects you individually. If it is well done, you share in the credit, while if it is poorly done you, also, will have to share in the common disgrace. Therefore, we frankly appeal to every Alumnus, to every student, for support and assistance, not as a personal favor to the board, but as though you, each and every one, felt your responsibility for the success of THE CHIRONIAN.

ONCE more we have gathered to place another stretch to our credit in the journey to a common goal.

Once more the college halls and stairways resound with the tramp of students.

Here and there is heard the cheery voice of welcome, accompanied with a grasp of the hand that shows how old friends and classmates are remembered, and how glad we all are to be together again. Some of us return after six months of leisure and pleasure; some from a struggle for the where-with-all to aid in eking out the necessary expenses of the next six months, some from a Summer of preparation for the studies of the Winter's course. Many new faces are seen among us, while here and there a vacant place in the class room shows that a few have fallen out of the race.

We hope to see those old faces again at some future day, when they may return to complete their course

To the new men we extend a most cordial greeting, and hope they will develop into a strong vigorous class—both intellectually and socially—and that they may take a lively interest not only in their own studies and plans, but also in everything that pertains to the good of the college. It is true that you come here to study—but your duty does not end there, for whatever benefits our college at home or at large benefits you also; consequently, even selfishness should prompt you to a hearty and generous promotion of all our college interests.

To some of us, this present college year means the realization of our hopes; to others the adding of another stretch or the entering upon the race—one and all striving for the same grand end. So let us all, no matter what position we fill, set our faces forward with a fixed determination to attend to all the duties that may devolve upon us—heartily and conscientiously, and this year will be long remembered for its harmony, its progress, its achievements.

Professor Allen's Introductory Lecture on Therapeutics.

AT the beginning of your course of Materia Medica and Therapeutics it is necessary to have a clear understanding of the underlying principles of therapeutics and of the methods of studying materia medica.

We understand "Materia Medica" to embrace all the substances which are known to produce deleterious effects upon the human organism, and which by virtue of these effects may be applied to the cure of disease. From materia medica we then would exclude all mechanical appliances and aids in the practice of medicine, limiting the term to a knowledge of the action of drugs.

At the very outset you must disabuse your minds of any preconceived notions concerning the greater fitness of some substances to be used as drugs than of others. There is probably less prejudice at the present time against nasty drugs than formerly. We physicians, of every school, are obliged to use Spanish beetles, cockroaches, as well as the poisons of insects and of serpents. The poisons obtained from decomposing animal matter are being carefully studied and to some extent used in medicine. Nor is there any greater prejudice against inorganic substances than against substances derived from the vegetable kingdom. Mercury is no more to be dreaded than some of the powerful alkaloids. Indeed, the more virulent a substance the more it should be prized for a remedy in disease. Such in brief is our conception of materia medica.

Therapeutics is the connecting link between our knowledge of drugs and our knowledge of disease. You study in the various chairs of the college the nature of the diseased processes of the organs and tissues of the body, the varying pathological appearances resulting from disease, and become expert in making a diagnosis. This you may do without any reference to the cure of your patient. Indeed, this matter of physical diagnosis may be a specialty apart from therapeutics. On the other hand the investigation of the nature of drugs may be a life-long work of an individual. It is extremely fascinating to watch the effects of drugs upon the different organs and tissues of the body. This you may do without reference to the application of such knowledge to the cure of disease. Therapeutics steps in here and renders useful our knowledge of drug action and our knowledge of disease action. It is, as I have said before, the connecting link between drug and disease.

There are numerous therapeutic methods in vogue at the present time; hydropathic therapeutics, electropathic therapeutics, etc. But the ones to which I would especially call your attention are physiological therapeutics and homœopathic therapeutics.

Empiricism can hardly be mentioned as a system of therapeutics, and yet empiricism has been the dominant method of applying drugs to the cure of disease in the past ages, and is still dominant. It essentially consists of the accumulated experiences of physicians in the treatment of disease by medicine, caring nothing whatever about any knowledge of drug action, caring very little indeed about pathology or symtomotology, believing it sufficient only to

know that certain drugs have been found useful in certain forms of diseases or of certain symptoms. If Dr. A. reports that the combination, X Y Z, has been found valuable in diphtheria, Dr. B. straightway uses this combination in all his cases of diphtheria. If Dr. B. fails in his treatment of diphtheria with the combination, X Y Z, he concludes that the combination is not valuable, and discards it from his armamentarium. It has been found impossible to erect any permanent therapeutical structure upon the crumbling basis of empiricism. There is no principle to guide us in the selection of the drug, and in the varying forms of disease and in the varying constitutions of the patients it has been found impossible to predicate anything definite concerning the action of drugs from this standpoint, and yet it must be said that many useful things have been learned from empirical practice. A few specifics, so called, continue to be commonly used, but I believe in all the cases where these have been found to possess value, it will be seen that a definite law governing the action of the drug can be elucidated. Indeed, one of the preliminary investigations of Hahnemann, was in this realm of empirical therapeutics, adding the argument of the law of similars in the observed action of a large number of drugs over diseases to which they possess a similarity. But I shall return to this subject of empiricism later on in my course and fully explain to you its dangers.

Physiological therapeutics seeks to produce on the patient the effects of a drug similar to those which the drug can produce on a healthy person administered in a similar dose. For example, should it be determined by the physician that it is necessary to physic a patient, a cathartic is administered sufficient to produce the desired effect. Should it be necessary to produce sleep an opiate is given, and so on. In the application of this method it is necessary to use full doses of the drug ; as much is given to the patient as would be necessary to produce similar effects upon a healthy person, and indeed, as a rule a larger dose is necessary. This method of treating disease is so simple and so pleasing to the common instincts of patients that it has maintained, and still maintains, a very strong hold upon the popular mind. It would seem quite evident that if a patient is suffering great pain the chief indication is to quiet the pain ; if the patient cannot sleep, an opiate must be given ; if a patient is constipated, a cathartic is necessary ; if the patient has a high temperature, reduce the temperature ; if the patient has a dry skin, cause sweating, and so on. Nothing is more plausible, nothing is more commonly done. This cannot be called antipathic therapeutics in the strict sense of the word. It is not the treatment of a disease taken as a whole, but only the treatment of isolated symptoms. It is puerile in conception and most certainly unsuccessful in its results. We believe that it is far more scientific and successful to take into account at once the whole state of the patient, and let our prescription be influenced by consideration of all the symptoms of the patient rather than of one most prominent symptom. Recently it has been the fashion to treat high temperature by antipyretics, but this method having been extensively tried in some large hospitals has been found to be extremely unsatisfactory in its results. While, for instance, in typhoid fever the temperature may be reduced to any desired point by means of antipyretics, the patient is not benefited thereby, nor is the diseased process checked in any way ; indeed the effect of antipyretics in these cases is rather to diminish the power of the patient to resist the ravages of the disease. Take another instance ; in inflammation of the kidneys, when the urine is very scanty, and dropsical symptoms supervene, the indication is said to be a diuretic. This diuretic stimulates the action of the kidneys and produces a greater secretion of urine, but thereby the inflammatory process is extended and the patient is much worse. Clearly the patient is not benefited by the forcing of results which nature is trying to avoid. We might give a large number of examples of prescribing for one single symptom, and of seeking to produce a violent reaction in the system by physiological therapeutics. While these methods may possibly be called for as palliatives in some emergency (which is not likely to arise in

the practice of a conscientious homœopathic prescriber), and while it is well for you all to have a clear conception of the physiological effects of drugs, yet it is not the method to be used in our practice.

Isopathic means the prescribing of substances supposed to be *identical with the* disease. That is, if a patient be poisoned by rhus tox or poison ivy, administer rhus tox for his cure. In syphilis administer the poison of syphilis. This principle was propounded early in the history of Homœopathy, but, very properly, soon died away. In the last few years it has risen again and has assumed undue prominence.

This idea has been carried too far, especially by a doctor of this City, who, speaking advisedly, is a fanatic on this point. He has obtained the products of a great variety of diseases and prescribes these products for the diseases which have produced them; pieces of tumors for the cure of the same tumors; triturations of a wart for the cure of warts, etc., etc.

While there may be some truth in isopathy, there is a fallacy underlying it which must be understood. To expose this fallacy requires an understanding of the methods of treating disease.

Drugs act upon the body by what is known as elective affinity. That is, in some peculiar way, by some peculiar law of nature or Providence, various drugs affect various tissues, so that, practically, in the experimental laboratory every disease can be simulated by drug action. Almost every disease has been thus produced, and, in all probability, every disease can be. We can produce tubercular consumption or pneumonia, or a disease so like syphilis that it can hardly be distinguished from the real article. So with typhoid and other fevers. We can produce inflammation of every organ of the body, fatty degeneration, etc. By direct action, some drugs affect almost wholly the brain or spinal cord, others the liver, others the kidney, others the eye or ear. We can rub spanish fly into the soles of the feet, even, and produce strangury at the neck of the bladder.

It is by means of this elective affinity that the medical profession has been able to produce certain effects upon the human body. To produce catharsis, we use a drug which performs that action and leaves the other parts of the body free from action. What this property is in drugs and how it exercises its specific effect, is a mystery. It is truly beyond our comprehension to understand why it is that a little particle of powder, which is called arsenic, which has no taste nor smell, and which seems as harmless as a bit of chalk, will produce violent inflammation, ulceration and death; how a little bit of strychnine or morphine will produce all of the effects of those drugs. Each is formed of the elementary substances, carbon, hydrogen, oxygen and nitrogen, arranged in different ways. What resides in this combination of atoms and molecules that affects the human body in this way is not known. Iodide of potash can be detected in the urine in four or five minutes. It may be eliminated from the body in a few minutes or hours, not a particle remaining, and yet the effects will go on for days, months and even years. They reproduce themselves over and over again.

It has been supposed that the action of these drugs was due to catalysis, which is a name given, in chemistry, to the action of two substances by the presence of a third. Certain chemical reactions will take place only in the presence of this third substance, which the latter having nothing to do with the combination, remains unchanged and comes out entirely free. We suppose that certain drugs taken into the system have an elective affinity for certain tissues, and, in passing through those tissues, they exert a catalytic action, set up a disturbance by their presence and pass on out of the body. The disturbance, having been started, goes on. The cell, which has been doing its work in the right way and minding its own business, comes in contact with a molecule of arsenic. It no longer performs its own function, but is destroyed and destroys its neighbors, simply because it has met this particle of drug.

In Hahnemann's time the same question came up. What is there in these substances to affect the human body? What is the force, for evidently there is some force determining the ar-

rangement of these atoms in the molecule? How should the same definite number of atoms grouped together in different ways, have a different sort of force exerted in a different way? How should this produce different effects in different substances?

Hahnemann, in his "Organon," called this drug force the spirit-like essence. It is a force like a spirit. Hahnemann was under the impression that this drug force or power, acted in some mysterious way upon the vital force of the individual, and that as long as the vital force of a person is normal, he cannot take disease. If a person is in good, vigorous health, he will not get sick. He can go among infectious diseases and remain unharmed. This is why some persons in a family will get the small-pox and others will not. It is because some of those people are in a better state of vitality than the others.

It has been discovered in Strasburg, in the laboratory, that microbes of the most violent diseases will not live in healthy human blood. Human blood serum within half an hour after extraction from the vessels, kills every one of the germs of disease.

Given an individual, sick with scarlet fever, what is the best method of treating the patient? To be sure, there may be some violent symptoms developed which will require a dose of a certain remedy, temporarily, to modify them, but why is that individual sick? By examining the patient we will find that before his sickness, he was laboring under some depression of vitality, which rendered him liable to take the disease, and produces complications which must be considered in your treatment of the case. If that patient is in the healthy state, that disease will not exist. Put him in a healthy condition of the blood and he will get over his scarlet fever. We must prescribe for the symptoms of the ill-health of the patient which made him liable to be sick. In the course of typhoid fever, unnatural symptoms present themselves, and render it impossible for nature to overcome the disease. Prescribe for those symptoms and the patient rallies at once. Hence we shall tell you that the best way to treat the disease is to treat the symptoms of the patient, just as they are presented to you. It is scarcely possible to antidote, by means of powerful drugs, a diseased process. It is scarcely possible to kill the germs when once they have taken up their abode in the system. We can kill the white blood corpuscles before we can destroy the microbes. We can only fall back upon the original symptoms and let the patient get well in the quickest way possible.

Suppose that a patient has taken scarlet fever, are you going to cure him by a dose of attenuated virus of scarlet fever? The patient is not sick because he was in a scarlet fever state of health before he took the disease. The antidote to scarlet fever will not necessarily restore him to health. Suppose that the scales of scarlet fever, trituated, *were* really an antidote for that fever. Your patient is not cured by prescribing this antidote. We may modify the severity of some of the symptoms of the fever, but we cannot prevent the consequences, the complications which arise before, during or after the fever.

We must treat symptoms and not diseases. While rhus tox, will sometimes relieve the symptoms of rhus tox poisoning, I have seen it fail, in three cases out of four, to give the slightest relief. Some other remedy was required and isopathy did not work in that case. Syphiline may cure syphilis, but in a hundred trial cases, not one was benefited by the virus of syphilis. Isopathy does not relieve us of the necessity of examining the individual and prescribing for his symptoms instead of for his disease, which disease may occur in a number of patients without presenting similar symptoms.

Do not try to antidote the whole diseased process. To cure typhoid fever, try to put the patient in a condition to get over the typhoid, and if there are any predominating symptoms, prescribe for those symptoms as they present themselves. It is doubtful if a diseased process can be absolutely checked. Some, which have seemed to be developed, have been stopped, but this was before the diseased condition had been allowed to develop. This, I have seen in a case of scarlet fever. It runs its course; yet

we can prevent serious illness during that course.

It has been said that even Homœopathy cures by contraries, but this is too recondite for us to consider now. It is true, we may prescribe a drug to produce a physiological effect which is not similar to the disease, from which the patient is suffering. We may, here, set up in the system an additional disease. Dissimilar diseases can exist in the system at the same time. We may have an inflammation of the meninges of the brain, and then, by drug action, set up a diarrhœa, and we have two entirely separate diseases going on. We may produce diseases without number, and still the old disease goes on by itself, having a good time, and we have done nothing to check it, but only started other diseases.

But some diseases cannot and will not coexist. If we try to produce similar diseases in the system we cannot succeed, *e. g.*,—in a case of inflammation of the stomach or gastro-enteritis, suppose we prescribe arsenic, which has the power of producing gastro-enteritis. If arsenic be exactly similar to the process which is going on; if the same tissues are affected in the same way, what happens? If we give enough arsenic, we change the natural disease into an arsenic disease. The patient now no longer suffers from catarrhal gastro-enteritis, but from arsenic gastro-enteritis. Now, what happens? If arsenic corresponds to the previous condition or to the additional symptoms of the patient which accompanied his original gastro-enteritis, then he will recover from that gastro-enteritis as soon as he has recovered from his arsenical inflammation. Some cases require but a few days, some take a longer time. If we produce just enough arsenical gastro-enteritis to counteract the catarrhal form, he will get well in a very short time, a few hours or a few days. Drug action passes off generally in a very few hours.

Thus in changing the diseased condition into a drug condition, nature will throw off the poison and the patient is well. That is the basis of all drug action, of all therapeutics the world over, of every school of medicine. If we can make the patient sick by means of drugs, just so sick that he gets over the natural disease, and becomes diseased by the drug, then he will get over the drug sickness and recover. Within my memory it was the custom to reduce the patient to the verge of the grave, and if, by some good chance, the diseased condition lost its foot-hold before the patient died, he got well. He was purged, and vomited, and bled and reduced so far that the disease got disgusted and left! Then the patient got well. This was the "reducing treatment," and was similar to the system nowadays, but more heroic. Now we prescribe drugs to change the nature of the disease, to convert the nature of the disease process into a drug process and allow the patient to get well.

Do not give drugs to produce additional diseases and make the patient sick in other parts of the body, but give him enough to change the original disease into a drug disease. The more of the drug which you give, the more difficult will it be for the patient to get well. Give just enough to change the condition of disease to a drug action and then stop. More than this does harm, less than that will not cure the patient. This brings us to the mooted and interesting question of a dose, which we will consider in a future lecture.

Clinic at the Laura Franklin Hospital.

PROFESSOR WILCOX.

A SECTION of the Senior class went to the *Laura Franklin Hospital* on the afternoon of the 6th, to witness an operation by Professor Wilcox for excision of the ankle joint.

Before the operation Professor Wilcox showed two other cases of disease of the ankle, which were somewhat similar to the one to be operated upon.

The first, Annie ——, æt 4 years, and having a family history of tuberculosis, had been under treatment for some time. There was a sinus extending into the joint, and several cavities containing pus around it. The epiphyses of both

tibia and fibula were enlarged and the os calcis was very much diseased. There was a spastic contraction of the muscles about the joint, so that very little motion was possible. This case was being successfully treated by injections of an etherial solution of iodoform.

Professor Wilcox called attention to the frequency with which inherited tuberculosis manifests itself in diseases of the joints during childhood, in most cases tuberculous masses being found, sometimes filling the entire joint cavity. The disease may either begin in the synovial membrane or in the extremities of the bones themselves.

There have been three cases of hip-joint diseases cured in this hospital by the injection of iodoform and ether, and others are now under treatment and doing well.

The second case presented was one of inherited syphilis. Maggie ——, æt 3 years. When she entered the hospital she had discharging sinuses leading into many of the small joints of her hands and feet, and it seemed as if a large number of bones would have to be exsected. However, most of the sinuses have closed, but with the loss of several joints. At the present time one foot, only, is in a bad condition, and it is very probable that it will have to be amputated.

After examining these two cases, the students were conducted into the operating room, where the patient was already on the table. This was Charlie ——, æt 2½ years. There is no family history of tuberculosis or syphilis. Eight months ago his right ankle began to swell. He was taken to Bellevue, where the foot was placed in a plaster of Paris splint. This treatment was unsuccessful, and in July last he was admitted to this hospital. Since then he has been treated by injections of iodoform and ether, and by applications of hot water, and with such remedies as calcaria carb., silicia, asafœtida, etc., becoming weaker and more run down all the time, and having a rise in temperature every day.

Before beginning the operation Professor Wilcox said a few words in regard to excisions in general. He said that he is not now so enthusiastic as he once was, owing to the good results obtained by use of the solution of iodoform and ether, and mechanical treatment, and to the fact that excision often fails to leave a useful limb. However, when the child is losing strength, and has fever and sleepless nights from pain, and is steadily failing from exhaustion, as in the present case, the excision of the joint often produces the most remarkable results as to the immediate symptoms, and may leave a very good limb. In cases of strong children, better results are obtained by the use of other less radical methods of treatment. Occasionally, after an excision where it has been impossible to remove all the diseased bone, an amputation has been found necessary. There have been two such cases in the hospital, both occurring after excision of the knee.

The operation was performed with the strictest antiseptic precautions. The instruments had been placed, an hour before, in a solution of carbolic acid 1–40, and during the operation the wound was irrigated several times with the 1–2000 solution of corrosive sublimate. The parts having been well scrubbed, and the sinus irrigated, Esmarch's bandage was applied. On probing the sinus it was found to lead right into the cavity of the ankle joint, and the roughness of the diseased bone could be easily felt. The first incision was then made on the outside of the foot, directly upon the fibula, and was carried behind and below the outer malleolus, and diagonally along the side of the foot. The ligaments and tendons were carefully separated from the bones by a series of fine incisions, and the periosteum was stripped up. The bones were found to be very soft and the diseased portions quite extensive. The outer malleolus was cut off by the bone forceps, and then an incision similar to the first one was made on the inner side of the foot. When the cavity of the joint was fully opened up, grayish tubercular masses were found in great abundance. After the ligaments and tendons had been carefully separated from the bones, the periosteum was stripped up, and about half an inch removed from both tibia and fibula. The fibula was so soft at the point of section that it broke off at the first touch of the chain-saw. Both bones

were found to be diseased above this point, and another half an inch was removed from the tibia and somewhat less from the fibula. The tuberculous matter was then scraped away, and the diseased portion of the astragalus gouged out with a sharp spoon leaving the lower portion of that bone a mere shell. Some diseased bone was also removed from among the smaller tarsal bones in front of the astragalus. Throughout the operation the greatest care was exercised in preserving the periosteum and the attachments of muscles and ligaments. As the incisions were out of the course of the large vessels, no arteries requiring to be ligated were met with, and the little oozing that followed the removal of the Esmarch's bandage was easily stopped by the application of hot water. Two drainage tubes were placed through the foot with one end at each incision, and a third was placed in the sinus, which opened on the top of the foot. A few stitches were taken—just enough to keep the tissues in place, as the wound will have to heal partly by granulation. The sutures used were of iron-dyed silk, which remain longer without sloughing out than the other forms of silk. The foot was sprinkled with iodoform, and a dressing of borated cotton and corrosive sublimate gauze applied. A brace made with a steel sole and a band around the middle of the leg, connected by steel rods, back and front, was put on after being immersed in an antiseptic solution. The brace was padded with borated cotton, and was made large enough for the entire dressing to be placed within it. The whole was then covered with rubber tissue, and a sublimated bandage was put on. The advantage of this mode of dressing over the plaster of Paris splint, consists in the ability to remove the outer layers of the dressing without disturbing the brace or the foot.

After the operation the students went over the hospital with Professor Wilcox, who pointed out to their notice a number of interesting cases.

SOME of the graduates of last Spring have been seen about college, inspiring us by their presence.

*The Paralyses.**

BY J. T. O'CONNOR, M. D., NEW YORK.

GENTLEMEN:

IF on your way to college to-day you had overheard some passer-by say that a friend had been paralyzed, the word "paralyzed" would have conveyed no real meaning to you if you know nothing of the subject. The ordinary non-medical person who hears the word used has, very likely, the idea that it means complete loss of muscular power, and the medical student does not need to go very far in his studies of physiology and anatomy to know that the word "paralysis" by itself may be applied to any one of half a dozen different conditions.

We will use the term to indicate a loss of nerve-function in nerves distributed to muscles, although it is applied where the loss of function involves a nerve which carries impulses to secreting organs, and also nerves transmitting sensory impulses. In the latter case, however, the term anæsthesia is more suitable. You know from your studies of the past two years that one set of muscles supplied by one definite nerve may be useless to the individual, owing to a lesion in that nerve, or that one set of muscles not innervated by one nerve, yet having one combined physiological action, may be useless, as in paralysis of the anterior tibial or the peroneal group of muscles, the lesion in this case existing in certain aggregations of large ganglion-cells in the anterior gray horns of the spinal cord. Here, then, are two cases in which groups of muscles may be useless, and yet the paralysis in the one case is to be differentiated from that in the other.

Then again there may be paralysis of one limb as a whole. This is of cerebral origin. But a paralysis of many muscles of one arm, especially in its upper part, is seen now and then. It is known as Erb's paralysis, and occurs in in-

* Being the introductory in a course of Lectures on the Symptoms of Nervous Diseases, given to the Senior Class of the New York Homœopathic Medical College.

fants and is caused by pressure made, during delivery, upon the brachial plexus, just above the clavicle. Such a paralysis may be mistaken for complete paralysis of the limb.

Paralysis of arm and leg of the same side is due to a lesion in the brain, in the motor areas for arm and leg in the cortex of the hemisphere of the opposite side. It is possible for an injury to one side of the cord in the upper cervical region to result in such paralysis, but there will then be something else—the sensations from the other side of the body will be impaired or lost. A knife-thrust could thus injure one lateral half of the cord without injuring the other, but a disease-process, such as myelitis, is not thus limited.

Facial paralysis is of two types. In the one known as Bell's palsy, the lesion is in the trunk of the nerve after it has emerged from the brain at the lower border of the pons. In this case all three branches of distribution of the nerve are paralyzed, the affected side of the face drops, the naso-labial fold is smoothed out, the patient cannot draw up the affected side of the mouth or wrinkle the affected side of the forehead, while the distinctive feature of this form of paralysis is the inability to close the eye of of the affected side.—It stands open even during sleep and the instinctive closure of the lids against foreign bodies is lost.

The cerebral type of facial paralysis, whether alone or as part of a hemiplegia, has the same symptoms, except that the eyelid is not affected nor the frontalis muscle. In this case the upper branch of the facial nerve has somehow escaped. But how? This has long been a puzzle to neurologists. It has been supposed that, on both sides, the eyelids and frontales muscles were innervated from both halves of the brain equally, or that there was a separate undiscovered nucleus on each side for the nerve fibres to these parts. When the nucleus of the seventh nerve, below the floor of the fourth ventricle, is destroyed as it sometimes is, by disease, the eyelid and frontalis muscle escape, and I am not aware of any case of nuclear disease in which the eyelid could not be closed. The experiments of Mendel shed some light on the subject. He has shown that in the guinea-pig and rabbit, when the young animal is deprived of the upper eyelid and frontalis muscle of one side, the wound allowed to heal and the animal kept until maturity, there is found upon post-mortem examination no degeneration of the facial nucleus; but there is positive and great degeneration of the posterior part of the nucleus of the third nerve, below the aqueduct of Sylvius. This, then, accounts for the clinical facts as we find them in man, and we can now readily understand that even in degenerative conditions in the whole of the third nerve nucleus we ought not to see the open eyelid of Bell's palsy, for the muscle that keeps it open (the levator palpebræ) is powerless, together with all the muscles innervated by the third nerve.

You have heard me use the terms motor-area of cortex, nucleus of nerve origin, and nerve trunk—all in connection with the idea of paralysis. A word or two of explanation may be of service here. It is a law of the construction of the nervous system that an impulse from or to the cortex does not pass through a continuous fibre, but that there is interpolated somewhere in the pathway of transmission a nerve-cell. This is very readily seen in the motor tract and in the tracts of the cranial nerves. The motor tract arises by prolongation of the axis-cylinder process from each ganglion-cell of the motor cortical area. The fibres, appearing white *en masse* from the presence of the myeline sheath, make up at first a part of the centrum semiovale, then converge into the internal capsule lying between the lenticular nucleus on the outside and the caudate nucleus and the optic thalamus on the inside. At the base of the brain they emerge in the crus, occupying the middle third of its pes, then passing into the pons they are separated, possibly ending there in part. At the beginning of the lower third of the pons the fibres from the cortical motor area for the face cross over the median line and end in large nerve cells found in that portion. This aggregation of cells we know as the nucleus of the facial nerve. From its cells new fibres arise to emerge at the lower border of the pons as the trunk of that nerve. The fibres for the upper

facial distribution have probably come down from the posterior part of the third nerve nucleus by way of the posterior longitudinal bundle to join the fibres from the nucleus of the seventh.

Now, another word or two of explanation. It is known that when a nerve fibre is cut across, only a part of it undergoes degeneration, that is, the part cut off from its source of nutrition. At first consideration we might think that the peripheral portion would degenerate, but this is not always so, for some tracts of nerve fibres degenerate upwards after injury along their course. Without going deeper into the physiological and anatomical details I may say that degeneration usually occurs in the direction in which the fibre transmits impulses, and extends to the end of the fibre. Thus, in the motor tract a lesion anywhere will be followed by this secondary degeneration, whether the lesion be situated in the cortical motor area, the centrum semiovale, the internal capsule, the crus, the pons or the spinal cord, the degeneration extending downward and ending with the termination of the fibre, that is, at its junction with a large motor cell in the anterior gray horn of the cord. We are thus furnished with a very important aid in diagnosticating a paralysis due to a lesion in the central half of the motor tract, that is, between the cortex and the ganglion-cells in the anterior horn of the cord, from one due to a lesion in the peripheral half of the motor tract, that is, between the ganglion-cells in the anterior gray horns of the cord and the periphery. Thus we see that the nutrition of the fibre in the central half is received from the cell of the cortex, but in the peripheral half it is from the large cell in the anterior gray horn.

In the sensory fibres of the spinal nerves the matter is not so readily understood. You know that these nerves emerge from the cord in two divisions or roots, an anterior or motor, and a posterior or sensory, and at some distance from their emergence the two roots unite to form one trunk. Now, upon the posterior root, before it joins the anterior, is a large aggregation of cells, forming what is known as the posterior spinal ganglion. The cells of this ganglion have something to do with the nutrition of the sensory fibres, but exactly what we do not as yet know. When a peripheral nerve is cut across, all of its motor fibres degenerate from the point of section outwards, and this is so, too, of the sensory fibres, but the portion of the latter in connection with the posterior spinal ganglion is still nourished. If the sensory root is cut across between the ganglion and the cord the peripheral cut-off portion does not degenerate. The ganglion, therefore, exercises a trophic or nutritional influence on the sensory fibres outwards. But it also does this in an inward direction, for if the section be as in the last instance, between the ganglion and the cord, we find that the fibres of the sensory root degenerate from the point of section upward, and this degeneration can be traced upward as far as the medulla at least. Moreover, if the ganglion itself be destroyed, the sensory fibres passing through it degenerate in both directions, centrally and peripherally.

Now, ordinary sensation is divisible into the sensations of touch, temperature and pain, and also the muscular sense. By the latter we know the position of our limbs through information sent to our consciousness concerning the position, degree of tension, etc., of different muscles. The fibres for muscular sense enter the cord in the column of Burdach, and as we ascend to successively higher levels we find that the newly incoming fibres push towards the median line the fibres which entered below. Thus is formed the column of Goll. We shall consider these columns and their fibres in detail when treating of locomotor ataxia, but just here it will not be out of place to say that when a peripheral nerve is divided, although sensation and motion, as far as they depend upon the integrity of the injured nerve, are lost, the muscular sense in the territory innervated by the nerve is not lost. Hence we must assume that between the muscular sense fibres of one nerve and those of a nerve near by there must be a very full anastomosis in the terminal distributions.

In a case of paralysis confined to one limb the loss of motor power in muscles innervated by one nerve, and the anæthesia or paræsthesia

in its sensory distribution will enable you to say that the trouble is in that nerve. What the lesion is must be determined by extended examination —it may be due to a stab, or to pressure, or to neuritis of other origin.

If the paralysis in one limb exhibits itself in loss of power in muscles innervated by different nerves, and especially in muscles that act together in some one physiologically combined motion, and if there is no impairment of sensation, you must look for its cause to some diseased condition in the aggregations of large motor-cells in the anterior gray horns of the cord.

Should the paralysis affect as a whole the two limbs of one side, remember the possibility of its being of spinal origin from injury, as already mentioned, but also remember the clinical presumption that its cause is in the cortex or the lower part of the pons, or in the medulla. If the face is involved, but on the side opposite to the paralyzed limbs the lesion is in the lower third of the pons, while if face and limbs of the same side are affected the lesion is above the last named site.

Paraplegia or paralysis of both lower limbs is due to transverse lesion of the cord, it may be in the lumbar or in the dorsal region. Here the loss of sensation, loss of power (usually) over the spincters and the girdle-sensation will call your attention to the cord as the structure at fault.

I have said nothing of the presence or absence of atrophy in the muscles. This begins at once on the occurrence of a lesion in the peripheral segment of the motor tract, that is, if the lesion is in the ganglion-cells in the anterior gray horns of the cord or in the nerve itself. If the lesion is in the central segment of the motor tract, no atrophy follows except that which results from want of use. The large cells spoken of have a nutritional influence upon the muscles governed by them as well as upon the nerve-fibres given off from them. The distinction between the slight atrophy brought on by want of use in the muscle, and that resulting from degeneration in the ganglion-cells or the nerve trunk is well differentiated by the use of the faradic current, but this method of diagnosis must be left until we study the special symptoms of cerebral hemiplegia.

A form of paralysis involving one, two, three or all the limbs is seen in severe cases of multiple neuritis. If the two lower limbs are affected it may in some respects simulate paraplegia of spinal origin, while if the disease has not progressed very far the diagnosis of a double sciatica may be erroneously made. The diagnosis of double sciatica is always to be received with doubt. Fortunately, in multiple neuritis the clinical picture is rather characteristic. The paralysis when present is usually limited to the peripheral half of the limb, that is, to the lower leg and the forearm and to the extensor more than the flexor muscles—the latter, however, is the case frequently in paralysis, of cerebral or of poliomyelitic origin, so that we may almost believe there is some greater innervation to the flexors than the extensors. In a well marked case of paralysis from multiple neuritis the patient has "drop-wrist," as in lead paralysis and and musculo-spinal paralysis, and he has "drop-foot," so that the point of the foot is directed downward. Hence, if able to walk at all his gait is peculiar, the thigh muscles acting strongly to lift the "dropped" toes from the ground and throwing the fore-leg forward, the foot then coming down with a flail-like motion. A similar walk is seen in some cases of poliomyelitis anterior, but in multiple neuritis the sensory disturbances will be of great service in diagnosis. Areas of anæsthesia surrounded by areas of hyperæsthesia, or *vice versa*, tenderness on pressure along the course of the nerve trunks, impairment of the temperature-sense for heat and often hypersensitiveness of the limb to cold, will enable you to make up your diagnosis. The loss of sensibility to heat is sometimes so great that patients through their not appreciating the great degree of heat employed, have been severely scalded by the application to the limbs of cloths wrung out of hot water.

We have now seen, gentlemen, some of the problems that are mentally presented to us when we hear the word "paralysis" used, and we have seen also how important it is to have a thorough

knowledge of the physiology and anatomy of the nervous system, not only in gross but also in the finer details, if we are to be enabled to differentiate the paralyses, one from another. The most important of these is paralysis of cerebral origin, and for its understanding we must lay a good foundation by the study of the brain, its cortical areas, its tracts and its great ganglia. The first two of these will occupy us at the next lecture. —*The Hahnemannian Monthly.*

IN MEMORIAM

NO fitter tribute could be given than the following, which we copy from the *New England Medical Gazette* of July, 1888:

Frances A. Dowling, the beloved and saintly wife of Prof. John W. Dowling, passed peacefully through the final shadows of earth and into eternal sunshine, on the 11th of May, 1888. Her life was gentle, and the elements so mixed in her that the pure, the true, the beautiful and the immortal far over-matched that portion of her nature which bound her to earth in the form of material necessity.

Mrs. Dowling was not only known and beloved by parents, husband, children, and the usual circle of near friends, but she also enjoyed an enduring and pleasant acquaintance with many members of the medical profession. This arose from the fact that her husband occupied exalted positions in educational and society circles; and likewise from the no less important fact, that she herself was an earnest, faithful and intelligent worker in the fields of charity and of medical progress. No cause demanding benevolence and enterprise could be brought to her notice without exciting in her mind a lively and abiding interest.

We remember with gratitude and admiration her labors at the first great fair, held at the Twenty-second Regiment Armory, about eighteen years ago, by which nearly forty thousand dollars were raised to establish a Homœopathic Hospital. She was the inaugurator of that movement, and for many years was active in raising money for the erection and support of a hospital christened with the name and dedicated to the memory of Hahnemann. Even in her last illness Mrs. Dowling was persistent in her efforts to aid in the fair for the New York Homœopathic Medical College, and through the assistance of friends she conducted one of the booths at this fair to successful issues; and her only tears were shed because she could not do more for the college she loved.

The members of the profession throughout the United States will recall Mrs. Dowling as the genial hostess of her husband's friends, at Lake George, in 1879, and again at Brighton Beach in 1881, when Dr. Dowling, as President of the American Institute of Homœopathy, entertained the physicians from many States, in a manner that rivaled both Oriental and Southern hospitality. And for years her pleasant face was seen at the Institute meetings, where she had a winning smile and a kind word for all.

During her husband's administration as Dean of the college, she was a true "helpmeet," and in everything that pertained to the interests of the students she took a lively and deep interest. She was always present at the college commencements, and at the closing exercises of the Hahnemannian Society, until final and fatal illness prevented.

Mrs. Dowling's devotion to her husband, her children, her friends, and the highest interests of humanity, has passed into a proverb among those who knew her. Thus we may sum up and epitomize her life: unselfish activity in every good word and work, and unswerving fidelity to her many friends. Her kindnesses and her hospitalities were the results of no studied arts, but they were the natural expressions of a noble soul.

Mrs. Dowling was stately without ostentation, benevolent without display, charitable without guile, and friendly without hypocrisy.

Her day on earth is ended, but her influence lingers like the sweet smell of a rose, or the perfumed memory of an inspiring song. Her face has vanished, but the light of her countenance still cheers the souls of her friends, even

as the hilltops remain bright with the glows and tints and collected splendors of the setting sun. Her name may fall less frequently from human lips than during life, but her virtues will be embalmed in many hearts, and her deeds of goodness will linger long in many memories.

Faith, fidelity and love, these three were her crowning qualities; but the greatest of these was her abounding love. As the mellow sunrays penetrate both the cabins of the poor and the towers of kings, so the love that was in this good woman's heart gave color and tone and richness of beauty to her every thought and act in behalf of friends of both high and low degree. Such a life is not only a sweet remembrance, and a glorious inspiration, but it is likewise an injunction and a fulfillment.

As we drop this prose wreath upon Mrs. Dowling's grave, we decorate it with a ribbon of poetry, on which is inscribed the expectation of God, an injunction to effort, and a suggestion of ripe achievement :—

"As each goes up from the field of earth,
Bearing the treasures of life,
God looks for some gathered grain of good,
From the ripe harvest that shining stood,
But waiting the reaper's knife.

Then labor well, that in death you go
Not only with blossoms sweet,
Not bent with doubt, and burdened with fears,
And dead, dry husks of the wasted years,
But laden with golden wheat."

Few women have passed on bearing a larger or more glorious burden of acquired usefulness than the dear friend whose name and memory we now seek to honor. To such a friend we can only say: "Well done," and "Amen."

S. H. Talcott, M.D.

Correspondence.

Editor of "The Chironian."

DEAR SIR :—Thinking that a little account of college matters since last April may be of interest to the boys, I write you this short letter. Since the last issue great progress has been made toward the erection of our new College Home. The plans are completed, the contracts have been awarded and ground was broken early in the Summer. The work has progressed steadily and the foundations for both the college building and the hospital are well under way. It is now expected that the corner-stone of the college building will be laid on or about the 20th of October—the exact date I cannot give you. The good news will be spread, however, in good time, and all the boys who are within hailing distance must be there. A full account of the proceedings ought to be published in The Chironian. I will say, further, that an amphitheatre is to be built as an annex to the Flower Surgical Pavilion, and it will be large enough to accommodate several hundred students. The ventilation of the new building is expected to be perfect as every attention has been paid to this important requirement. This will be cheering news to some of you, as you sit in the top seats in our present amphitheatre, and wonder if "there is a place that's hotter than this." Both the new buildings are to be under cover by Spring, and to be ready for occupancy at the opening of the session of 1889, Then, indeed, will our Alma Mater have a dwelling-place in keeping with its high reputation for good scholarship and solid attainments.

F. W. Hamlin.

College Notes.

WHICH side of the chart is the top, Schaf?

Prof. D. H. Talcott has not yet returned from Europe.

H. Van Bergen, formerly of '88, has concluded to try his fortunes with '89.

Professor O'Connor now has his lectures upon nervous diseases combined with a clinic.

Wood, Sherman and Low, all of last year's class of '90, have by hard work stepped up into '89.

Professor Danforth has added some finely colored charts (after Savage) to his other pictorial helps.

DR. C. A. GWYNN, '88, has received the appointment of resident physician at Helmuth House.

WINTERS (Cornell '88) has entered the class of '90, as have also Baker and Dennison, formerly of '89.

DR. W. T. HELMUTH, JR., has been appointed surgeon to the Laura Franklin Free Hospital for children.

DR. T. C. WILLIAMS '81, is Professor of Physical Diagnosis and Diseases of Heart and Lungs, at the New York Medical College and Hospital for Women.

'NINETY looks forward with much pleasure to being the first class to graduate from the new College, and hopes the erection will be pushed by the contractors.

'NINETY-ONE elected officers as follows: Charles E. Birch, President; A. De S. Knickerbocker, Vice-President; Secretary and Treasurer, W. H. Leonard.

WE start this year with very few changes in the Faculty, or in the usual running order of college. Professor Wright's department has been absorbed by Professor Leal, and the Freshmen will never know what they have missed.

THE election of officers by the class of '90 resulted as follows:

President, C. B. Flint; *Vice-President*, G. H. Iler; *Secretary*, G. E. Schuppan; *Treasurer*, C. D. Cropsey.

THE class of '89 has re-elected all its officers from last year:

President, C. E. Wilcox; *Vice-President*, C. P. Opdyke; *Secretary*, E. G. Tuttle; *Treasurer*, Paul Allen.

AT Hurlbut's Pharmacy, 3 East 19th street, students can obtain all the text books used in our College. Being convenient to the College, we would call the attention of our readers to the advertisement found upon another page

OFT we see Frank with eager, expectant gaze, watching the students as they wearily climb the stairs, one after another; but only to turn away with the same sad disappointed look—for Birdsall never comes more, his place is vacant. Yes, Frank, the old landmarks are slowly disappearing. It will be the college building next.

PROFESSOR DOUGHTY will change his plan of teaching at the Saturday clinic. Instead of having such a large number of patients on hand, and allowing diagnoses by the students, more time will be given to lecturing, using only typical cases for illustrating the subject, thus avoiding duplicate cases, and giving the time thus gained to the treatment of a greater variety of diseases in a more thorough manner.

A LARGE audience gathered in the amphitheatre Tuesday evening, October 2d, to hear the opening lecture by Prof. J. T. O'Connor, on "The Localization of the Brain Functions." The subject was handled in Professor O'Connor's usual clear and able manner, and the mind of every student was strongly impressed with the importance of a knowledge of the various centres of the brain, the parts they control, and the symptoms apt to follow any pathological condition in them. The appreciation of the audience was manifested by the hearty and prolonged applause that followed the lecture. The Dean announced that Professor Helmuth had lately been honored by receiving from Yale, the degree of LL.D., and the "students' friend" received a perfect ovation as he stepped forward and made a few remarks in his customary happy style.

GERMANTOWN, Tenn., Feb. 18, 1888.

JEROME KIDDER MANUFACTURING CO.

GENTLEMEN:—The No. 5 Hydrostat Electro-Faradic apparatus has been duly received, and from the annoyance I have experienced in keeping other machines intact, it seems that your device is but *little less* than *perfection*. Its convenience is striking, the ready and certainty of its work is marvelous. The durability, simplicity, compactness and efficiency is striking and suggestive to the needs of a busy practitioner, and above all will add, that the various currents produced in this machine, cannot be equaled by any machine now offered to the profession.

Yours truly,

T. H. WILLIAMS, M.D.